THE AMERICAN ARCHITECT AND BUILDING NEWS.

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A BILL is before the General Assembly of Ohio, and has passed the lower house, to establish a Board of Public Works in each city in the State whose population reaches one hundred and fifty thousand. The boards are to consist of five members, one of whom is to be replaced each year. They are to be elected by the people; and any of them may be removed for incompetency or malfeasance by a vote of two-thirds of all the members of the Board of Aldermen of their city. The offices of Trustees of Water Works, Street Commissioners, Park Commissioners, Civil Engineers, Commissioners of Sewers, and Platting Commissioners, are abolished; their duties and powers are transferred to the Board of Public Works. The members have seats and voices in both branches of the city governments, but not votes; and at least one member is obliged to attend every meeting of either branch. No resolution passed by the governing boards of any city covered by this act, involving the expenditure of money, or changing the condition of real estate, is to take effect until it has the approval of four members of the Board of Public Works. The boards have power to pass such resolutions recommending public improvements as they think best; but no improvements are to be undertaken without the vote of the city legislatures. The boards are directed to give out all city work by contract to the lowest bidders. They have power to make alterations in work under contract; to employ such engineers, superintendents, and subordinates as they think best; to fix their salaries, and to purchase materials, under certain limitations which may be prescribed by the city councils. They have also charge of the highways, no use of any street or highway being granted to any railway company, and no laying of sewers, or gas or water pipes, nor any obstructions of streets, being allowed, without their permission; and all questions of damages are to be submitted to them.

THE act gives the Boards of Public Works very large powers, and considerable pains is taken to hold them to accountability. The provision for compelling their attendance at the meetings of the city legislatures is an excellent one, both for their defence and their control. They are also required to hold meetings every day, and preserve a complete record of all their transactions, registering the vote of each member upon every resolution that comes before them. They are obliged to give bonds in the sum of fifty thousand dollars each, with three sureties. Their salaries are fixed at thirty-five hundred dollars each. We should say that the elective tenure of the boards was a weak point in the bill. The measure is evidently aimed at the evils which arise from the bad composition of city councils, chosen by the irresponsible and disreputable constituencies of large cities. The powers conferred on the boards will certainly make them the object of ambition to political adventurers and demagogues: the salaries are not large enough to attract to such laborious positions persons whose position is above the temptation to dishonesty. The same constituency which elects the councils and boards that these are meant to control chooses the controlling board; and the same arts are likely to be used to secure the prizes in both cases.

THE President has sent to the Senate for ratification a treaty for the establishment of an International Bureau of Weights and Measures. The purpose of the bureau is the accurate comparison of the standards of weights and measures in use among the nations which are parties to the treaty; the preparation and distribution of authoritative standards, or prototypes as they are called in the language of the treaty; the periodic comparison of the local standards with the "prototypes" in charge of the bureau; and the examination and verifications of such standards as shall from time to time be submitted to the bureau by various governments or scientific bodies. The treaty has been signed by the plenipotentiaries of nearly all of the European powers, and several of the American. Of the great powers, England alone stands aloof, as she has persistently done from every movement for any common action in regard to either weights, measures, or moneys. The bureau is to be established and maintained at Paris, where the French Government will charge itself with the purchase or construction of a building for its permanent use; but all the expense of it is to be shared among the governments which are the contracting parties, in proportion to their population. The treaty was signed in May, 1875, and the ratifications were to be exchanged within six months, the treaty being expected to go into operation on the 1st of January, 1876; but it is only within a few days that it has been laid before the United States Senate. Such a bureau will doubtless be of much value in establishing accurate relations between the various standards of measurement that are now in use, and may also have its effect in bringing home to the different states the lively inconveniences which come of their variety. When the states which do not now use the metrical system come to adopt it, as they undoubtedly will, the bureau will probably be a means of accelerating the change; and meanwhile scientific men and associations may derive from it many advantages which do not occur to the lay mind.

A BILL has been introduced into the House of Representatives appropriating to the completion of the Washington Monument three hundred thousand dollars out of the million and a half which the Centennial treasury is required by the Appropriation Act to refund to the General Government out of its profits. If any thing could reconcile us to defalcation on the part of the Centennial treasury, it would be the dread of seeing the Washington Monument finished: nevertheless we doubt whether the three hundred thousand dollars would go far towards it.

THE SATURDAY REVIEW contains from time to time articles on various points of the history of architecture, which are of great value to students. Latterly it has had a series of articles on the towns of the Eastern Adriatic coast, a region whose architecture, excepting that of Spalatro, or Spalato, as it is now considered proper to spell it, is comparatively little known, though of importance in the sequence of history. Of these we have already borrowed the most of the article on Parenzo for illustration in our paper. The last two numbers of the Saturday Review which we have received, those of Feb. 19 and 26, contain papers on Ragusa and its architecture, which it is worth the while of architects to find and read; indeed, we commend the whole

series to their attention. From internal evidence, and from his well-known connection with the Saturday Review, we feel justified in assuming that the author of the papers is Mr. E. A. Freeman; and we are glad to see it announced in the Athenæum, that he has in press a volume of architectural and historical essays from this and other journals. Mr. Freeman is hardly equalled in breadth and acuteness of view and picturesque vigor of style by any English writer on the history of architecture. An article on the Origin and Growth of Romanesque Architecture, which he published some three or four years ago in the Fortnightly Review, and which was reprinted in No. 1485 of Littell's Living Age, set forth, more clearly and philosophically than we have seen them shown anywhere else, the true positions and relations, in historical development, of Roman and so-called Romanesque architecture. We do not know that he has republished this paper, and shall be glad to see it more securely placed than between the covers of a magazine.

We were sorry to see that, in a late number of the Albany Times, one of our articles was copied with the caption, "By the official organ of the American Institute of Architects." We wish distinctly to say, for the sake of the Institute and ourselves, that we do not assume to represent in any way the opinions of the Institute. Our journal has been adopted by the Institute as the means of making public whatever documents or records of transactions it chooses to publish through the press; and all such publication is sufficiently discriminated in our text from the private utterances of the journal, for whose opinions no one but the editor is responsible. We take this opportunity to caution our readers, on the other hand, against receiving the communications which we print in smaller type as indications of the views of the American Architect. We may mention, for example, the communications which we have already published concerning the designs for the Albany Capitol, and to which we refer because we have thought it important not to present our views until we could give a fair representation of Mr. Fuller's design, for comparison with that of the Board; and any one who will take the trouble to consider our article in No. 11 (March 11) will see that, while we have given as clear a summary as we could of the report of the Board, we have carefully refrained from expressing any opinion whatever of the justice or wisdom of it, or of the comparative merits of the two designs. We had hoped that in this number we should have been allowed to give Mr. Fuller's design, and so been free to say our say without exposing ourselves to the imputation of having given one side a better hearing than the other.

We wish to say a word to correspondents, which may save some trouble to us, and perhaps to them. Communications which refer in any way to the business of the paper, its circulation or advertising, should be addressed to the publishers. Those which concern the matter of the paper, literary or pictorial, should be addressed simply to "the editor of the American Architect," under care of the publishers. We must not be expected to publish communications of which the author's name is not given. We would call to the attention of correspondents who are unused to writing for the press, the old-fashioned rule that communications should be written on only one side of each leaf; and request them to send clear and open manuscript, and to leave a liberal margin at the top of their sheet for the necessary directions to the compositor. We wish especially to remind those who send us papers of controversy, that the public to whom our journal is addressed cannot be assumed to take any interest in their private feelings, however much it may give to the subjects they discuss; and that recrimination, the expression of personal annoyance, and the imputation of unworthy motives, are out of place in their communications. We believe fully in the free discussion of principles and things, and shall be glad to open our columns to it as freely as we can; but we shall assume to protect our readers from the infliction of personalities, and shall adopt the policy of excision, even though the shape of the communications should be marred by it.

In our editorial of last week, there was a curious slip which quite destroyed the point of one paragraph. As printed, the last paragraph but two closes thus: "No one is likely to be offended by taking the five-foot triglyphs of the Parthenon for triglyphs." It should have been, "by taking the five-foot triglyphs of the Parthenon for the ends of wooden beams."

ETCHING AND ETCHERS.

The first edition of Mr. Hamerton's Etching and Etchers[1] was an *édition de luxe*. It was illustrated with some three dozen etchings from plates gathered together at great trouble and probably considerable expense, for the sake of giving original examples of as many as possible of the etchers whose work was described and criticised. The book, therefore, had a certain value as an illustrative collection of original etchings, as well as an important treatise upon the art; but it was costly. The edition once printed, however, the plates had to be returned to their owners, and it was not to be expected that they could be got together again when it became desirable to print a second edition. In doing this, therefore, Mr. Hamerton gave up the idea of providing the book with plates as embellishments, to use his own word, and decided to give them only to make the text more intelligible. In the second edition there are a dozen plates, the most of which are careful copies by the author, of work which suited his purpose as illustrations. These are mostly executed with notable care; and such as we could compare with the originals we found to be, with but little exception, excellently copied, both for precision and spirit. A most valuable improvement to this edition for practical students, and one which of course it would have been altogether impossible to add to the first, is the record which is attached to each plate, of the manner in which it was executed and printed, with the exact duration and succession of the bitings. On the whole, though one misses the little collection of originals which illustrated the first edition, considering the greater practical usefulness and the diminished cost of the second, the reader may be content to accept the change, which was inevitable.

The letter-press of the book has been in a great measure recast. There is much new matter and some omission. The preface is new; the appendix, with its directions for the practice of the art, has been mostly re-written. Between the two editions the author had published his Etcher's Handbook, which gives a more detailed account of the various mechanical processes of etching. He does not go over this whole ground again, but confines himself to a careful description of the two methods of work which he thinks most important, — the old and regular process, and his own positive process, by which the etcher makes his drawing at once in the bath in dark lines on a white ground. The critical part of the work is somewhat revised, and some of the severest criticisms of contemporary artists omitted. The chapters on English etchers, which formerly headed the account of the living schools, have yielded their places to those on French artists, whose superiority over the English in this branch of art fully entitles them to precedence. A good many artists, especially among the French, have been added to those who were mentioned in the first edition.

[1] Etching and Etchers, by Philip Gilbert Hamerton, author of the Intellectual Life, &c. Boston: Roberts Brothers. 1876.

Mr. Hamerton is a warm admirer and advocate of etching, and has done more, we suppose, than anybody else except Dr. Haden to rouse interest in it among his countrymen. He takes a high and artistic view of its capabilities and proper uses, and is pretty strict in his doctrine of its proper treatment, and the rightful value and pre-eminence of the etched line. His critical acumen, and the quality of his writing, are well known. His catholicism, his thorough knowledge and appreciation of contemporary art in its most different phases, his personal acquaintance with Continental artists and their ways of working, make his criticism even-handed and appreciative. Though less interesting as an etcher than as a writer, he is thoroughly well versed in all the technique of the art, has indeed himself added considerably to its mechanical resources, and is well practised in its manipulations; so that he knows just what to say to those who look to him for practical direction. On the whole, his books are of more value to the student or amateur than any other treatises on etching that we have seen. Etching and Etchers, in fact, with its union of general discussion, detailed criticism, and careful directions for actual work, covers ground that, as far as we know, has not been attempted by any previous writer.

Mr. Hamerton is no transcendentalist. He never flies into regions of elevated feeling, or far-reaching principle, where simple common-sense and a natural feeling for art are not sufficient companions; and persons of high artistic aspiration may find him unsatisfactory for this reason. But in the region in which he chooses to walk he is very helpful, right-minded, and suggestive company. The introductory chapters, which discuss the general qualities of etching and its relations to the other fine arts, are perhaps likely to be most interesting to general readers. They are clear and compact, and as animated as Mr. Hamerton's best writing always is. The chapter on the distinction between connoisseurs and amateurs may be specially commended for popular reading in these days of universal connoisseurship. Those which describe the works of various schools and artists are full of valuable information which it is not easy to find elsewhere, and of the criticism of an expert, which is also rare. The practical directions given in the appendix should be sufficient, so far as directions can be sufficient, for the guidance of artists who wish to learn the processes of etching.

We have before touched upon the appropriateness of etching for the representation of architecture, and shall have more to say of it at another time. Although landscape and figure etchings attract naturally most of Mr. Hamerton's attention, since there are most of them, he has a word to say for architecture. The work of Meryon and Rochebrune gets its share of recognition, though perhaps architects might not apportion their approval just as Mr. Hamerton does. In fact there are, as we shall have occasion to say, certain qualities in architectural etching, of which none but an architectural student is likely to realize the full importance. In such a book as this there is necessarily much selection and omission: yet we are rather surprised that Rochebrune's large plate of Notre Dame at Paris receives no mention. Mr. Ernest George gets more praise than we should be quite willing to accord him. His etchings show picturesque feeling, but are wanting not only in vivacity and accent, but in significance of line, in fact in drawing, as well as discrimination of tints. They seem to us amateurish and indecisive, what a French artist would call *mous*. An architect would have been likely to say a word too for the etchings of De Gourcy, in whose works are passages of architecture given with much precision and sensitiveness, in which last quality they are far superior to the better-known work of Martial.

WORK on the new custom-house at Chicago was resumed last week.

THE ILLUSTRATIONS.

THE CENTRAL HALL AND STAIRCASE OF THE NEW CITY HALL, PROVIDENCE, R. I. FLOOR PLANS OF THE SAME. S. J. F. THAYER, ARCHITECT.

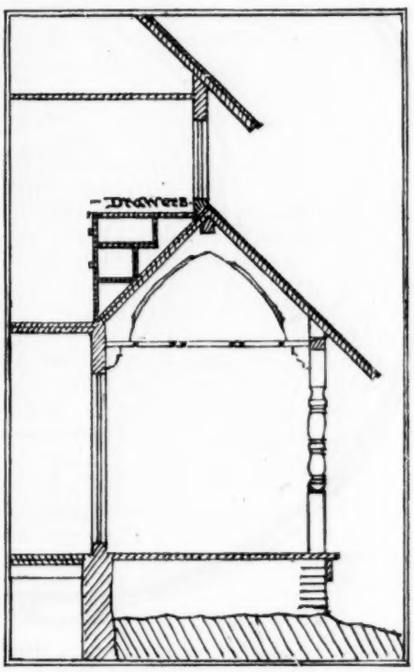
THIS hall occupies the centre of the building, and is twenty-seven feet wide between the columns, and sixty-three feet long. Corridors extend entirely around it, twelve feet wide, from which open all the principal apartments of the building as explained by the plans. The columns are of polished gray granite; the bases, capitals, balustrades, &c., are of iron; the staircase has marble treads. The arches and walls are all of brick, with the decoration-features in stucco.

The exterior is of Westerly Rhode Island granite, backed with a vaulted brick wall. All the interior walls are of brick, with some minor partitions of concrete blocks. The floors and roof are of incombustible materials throughout, the former of brick arches carried on built plate girders and rolled beams. The roof is to be of Tiel concrete slabs, fitted to T-irons covered with slate and copper.

The works are being executed under the superintendence of the architect, and will occupy about two years longer, having already been in progress a year and a half. The expense of the building will be about one million dollars.

HOUSE AT LENOX, MASS. MR. J. A. OAKEY, ARCHITECT.

The exterior of this house above the first floor is finished in pine shingles soaked in linseed oil. The veranda, as shown, has



not a flat ceiling, but is carried up to a ridge, with arched ribs on line of each veranda post; the plates are tied at these points by turned rods four inches square.

BUILDING FOR THE RUTTER ESTATE, CHICAGO, ILL. MESSRS. LAING AND FEHMER, ARCHITECTS.

PROPOSED THEATRE FOR POPULAR OPERA, AT PARIS.

ONE of the late numbers of the *Revue Nouvelle d'Architecture* contains an account of an opera-house which it is proposed to erect at Paris at the intersection of the Boulevards St. Martin and Magneta, thus completing the ornamentation of the Place du Château d'Eau. For fifteen years or more past, various people have presented schemes for occupying this site with as many different kinds of edifices. It has at length been decided, that, as the Place du Château d'Eau is situated in a quarter that is mainly inhabited by the laboring classes, the building to be erected should be devoted to the performance of the popular opera. A convention was held some time since, at which were present among

others MM. the Marquis de Saint Georges, Halanzier, the director of the new Opera House, Carvalho his lieutenant, Regnier the comedian, Ambroise Thomas, Sardou, Roger, Duprez, Alexandre Dumas, Gounod, Faure, and many others more or less prominent in the theatrical world. To this convention M. Adolphe Sax submitted a project, which he had studied for a long time, for a theatre capable of containing sixteen thousand persons; this theatre it was proposed to erect at the angle indicated, where it would be completely isolated by a new street joining the Rue de Bondy with the Rue Château d'Eau, and skirting one side of the Théâtre des Folies Dramatique.

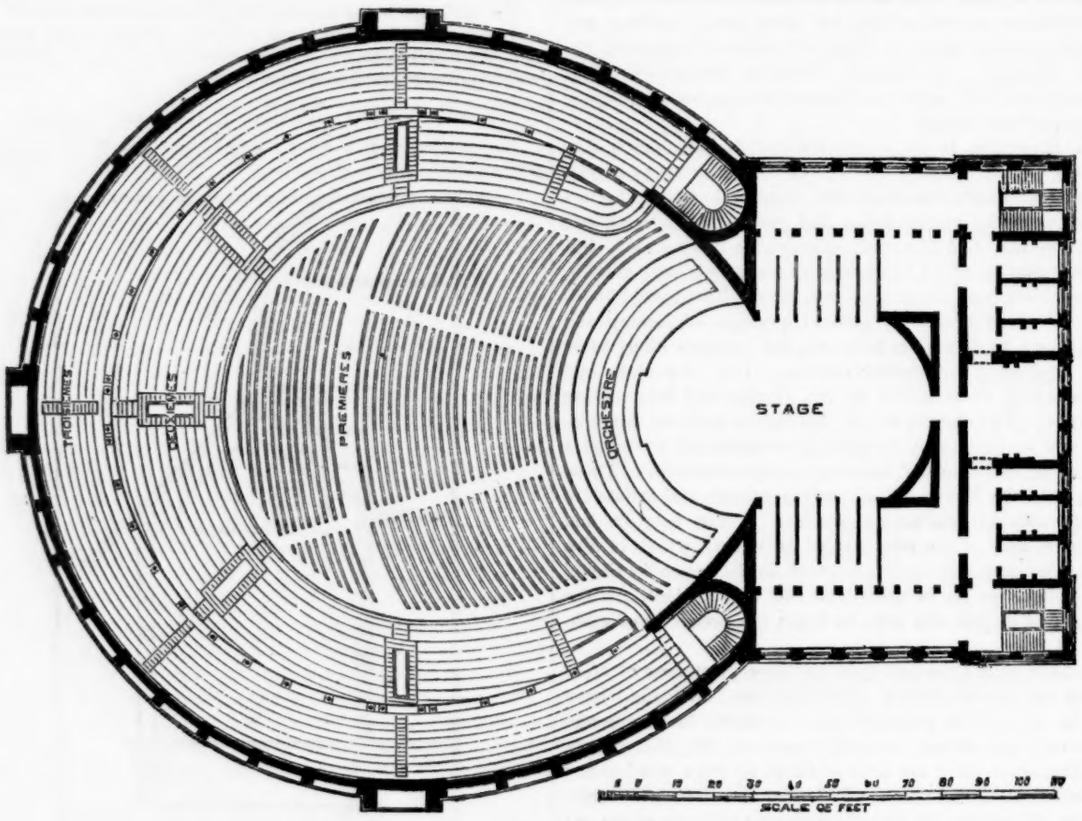
The principle of M. Sax's project was warmly discussed, and finally referred to a sub-committee for further consideration.

The idea of erecting such a theatre caused considerable excitement in artistic circles; and M. Davioud, the architect of the Théâtre Lyrique and the Théâtre du Châtelet, and who was last year appointed Inspector of Public Works in Paris, recalled having given special attention to the subject ten years ago; his project having received a medal at the Vienna Exhibition. He has with the assistance of M. Jules Bourdais, a distinguished engineer, reviewed his former conception. These gentlemen materially modified the form of the auditorium while preserving the monumental aspect of the building. Their project, of which we produce the plan and longitudinal section, provided for the erection of a building capable of seating nine thousand persons, distributed as follows: —

1,600 places de loges.	2,600 places de premiers.
2,000 places de deuxièmes.	2,800 places de troisièmes.

The plan of the auditorium is semicircular at the part opposite the stage. The front portions of the plan are traced on curves which are determined by points in such a way that, if divided into twenty equal parts, each part will serve as a reflector of sound to so many parts of the room. This front portion of the house, forming the frame of the proscenium, presents an area of five hundred square mètres, and forms an immense speaking-trumpet for the actors, the orchestra, and the chorus. At the back of the stage is a surface generated by the revolution of a curve of the same nature as that described above, and disposed in such a manner as to reflect forward towards the audience the sound that is ordinarily lost. In addition to this, seventy-two vases for re-enforcing sound (*vases renforçants*) are placed near the orchestra, in order to augment as much as possible the sonority already developed by other contrivances of construction; these vases are tuned to accord with the successive notes of a chromatic scale of six octaves, and can be rendered resonant or mute by means of a special mechanism.

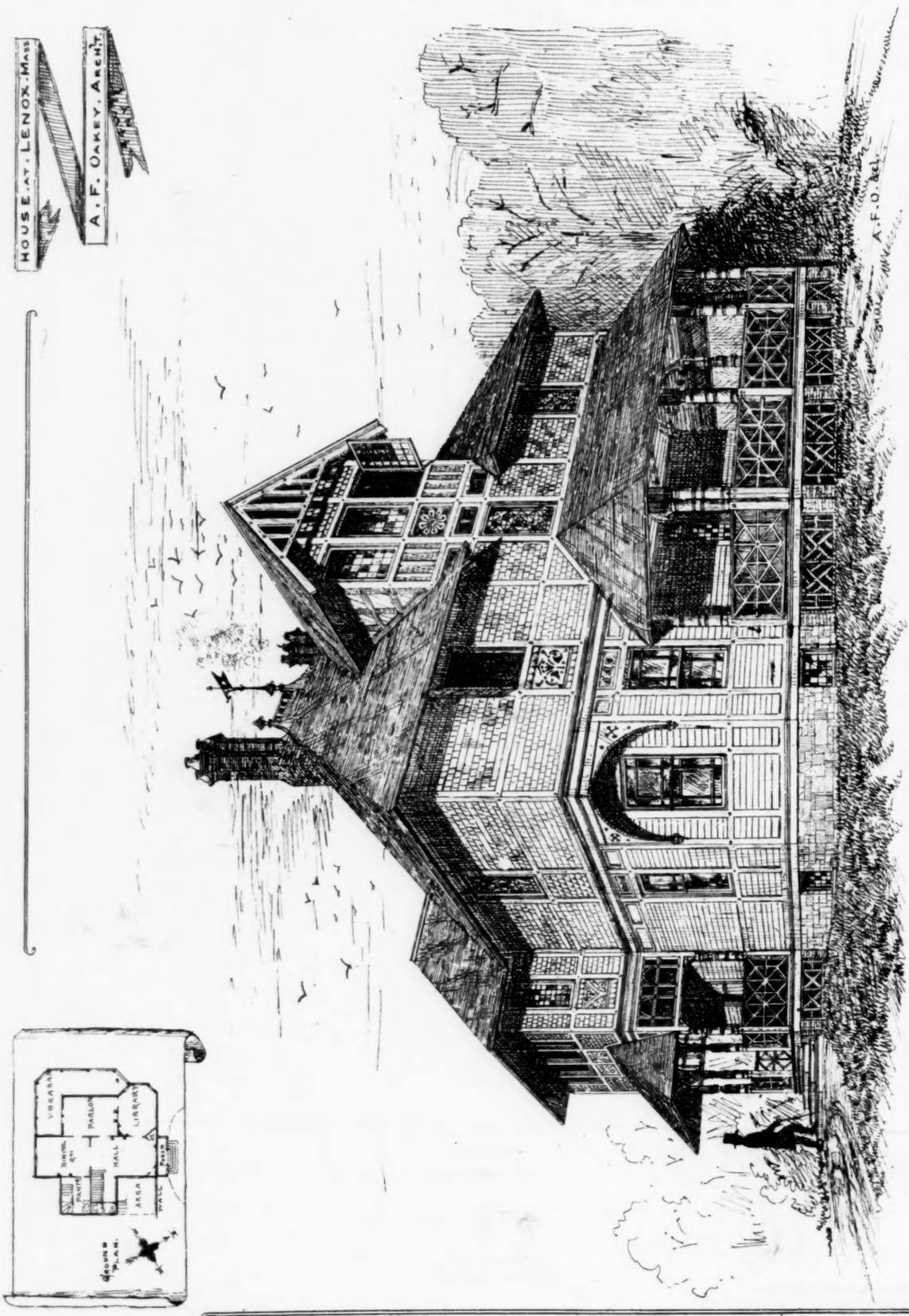
MM. Davioud and Bourdais, recognizing the faults that exist in the ordinary method of seating an audience, have done their best to devise an arrangement which shall reduce these faults to a minimum. They have therefore designed the floor in such a way that each range of seats overlooks the one in front of it, not only by the ten centimètres between the eyes and the crown of the head, but by ten centimètres in addition, to allow for the more or less prominent coiffures of the ladies. The line which satisfies these conditions is not a straight line, but a curve in which for each equal and regular horizontal measure there occurs an irregular increase of the vertical measure. This arrangement is intended to obviate the disagreeable necessity of continually dodging about to get a glimpse of the stage, between the heads of the spectators upon the row in front. Since the theatre is to contain nine thousand spectators, those in the last row of seats will, according to this arrangement, be placed nearly twenty mètres above the level of the stage. As may be supposed, any ranges of *loges* above this curved system of seats would be in themselves little desirable, as but an unsatisfactory view of the stage could be obtained from them. The common arrangement of superposed galleries of *loges* has been abandoned, the architects believing that the vertical height that would be occupied by such galleries could be much more usefully employed in continuing the system of curved seats to the wall of the auditorium. Thus it is hoped to obtain from every seat in the house a good and uninterrupted view of what goes on upon the stage. There are many theatres where no provision is made for ventilation; but, in those in which any such provision is made, the principle applied is that of exhaustion, which leaves the whole interior in a condition of low pressure, and admits, at every opening of the box-doors, a rush of cold air which is so often productive of serious colds and rheumatism. It is considered to be not less easy to put the internal air in a condition of pressure, and thus reverse the direction that the draughts usually take. It is proposed then, to employ a steam-engine of ten or fifteen horse-power to work a ventilating apparatus which is to be placed at the



PLAN OF THE AUDITORIUM.

HOUSE AT LENOX, MASS.

A. F. OAKEY, ARCH'T.



HELIOTYPE

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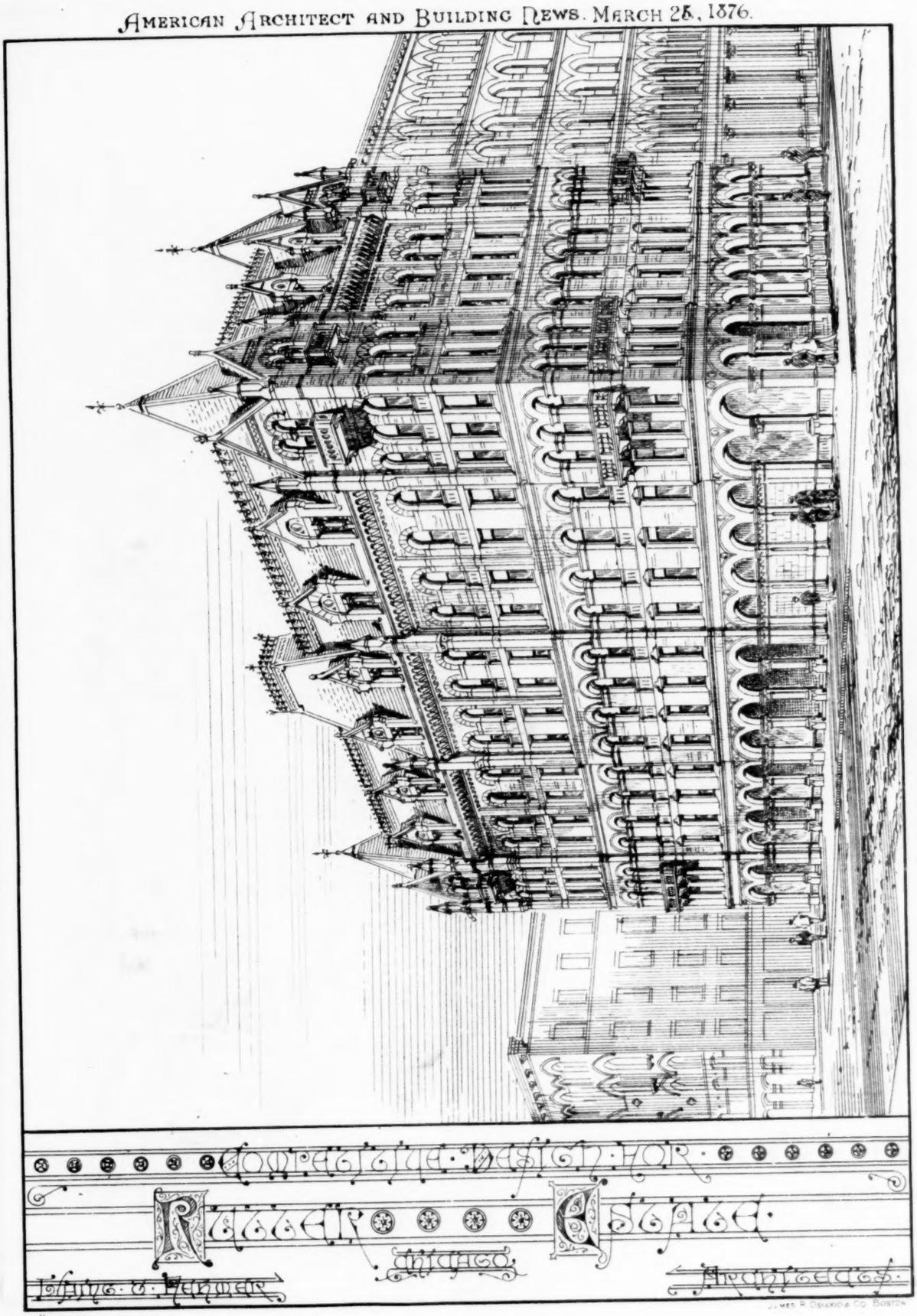
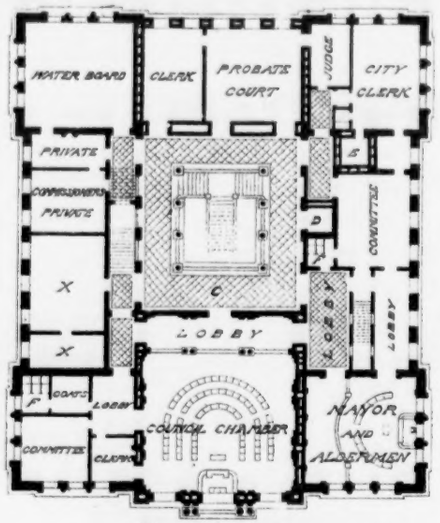
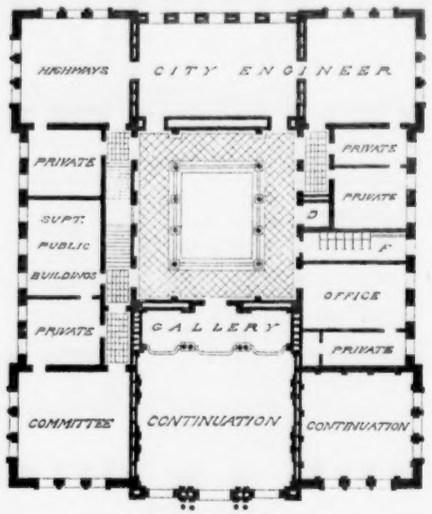


COMPETITIVE DESIGN FOR
ALBANY CAPITOL.
LEVI T. SCOFIELD, ARCHITECT.

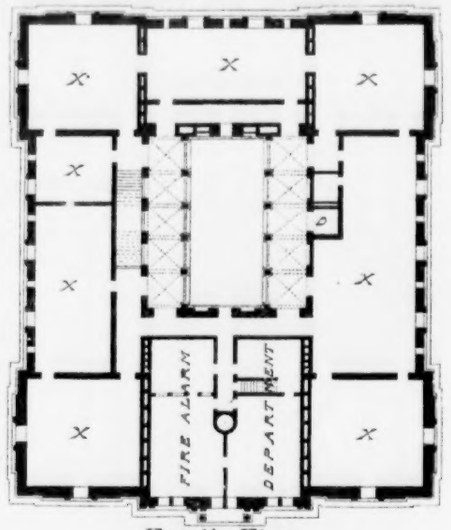
HELIOTYPE
JAMES R. OSGOOD & CO. BOSTON



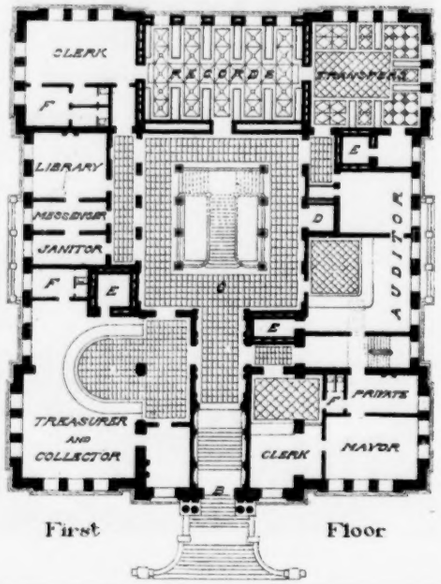
Second Floor



Third Floor



Fourth Floor



First Floor

Floor Plans · City Hall · Providence · R.I.

Jas. Y. Smith, Geo. H. Corliss, Wm. G. R. Murray Commissioners.

Sam[t] J. F. Thayer Arch[t]

REFERENCE TO PLANS

A-A-A-A-A- ENTRANCES

B- GRAND ENTRANCE

C-C-C- CENTRAL HALL AND STAIRCASE

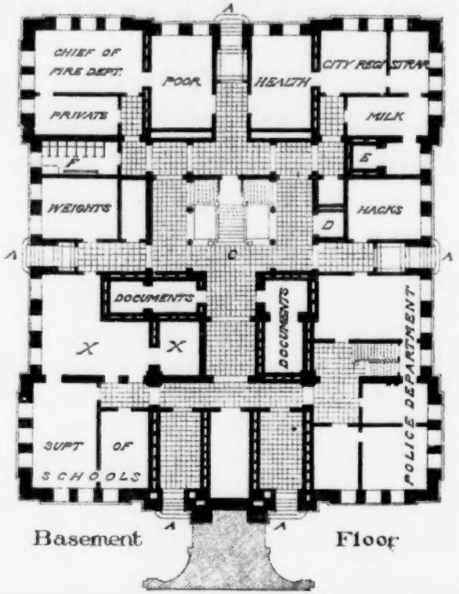
D- ELEVATOR

E-E-E- VAULTS

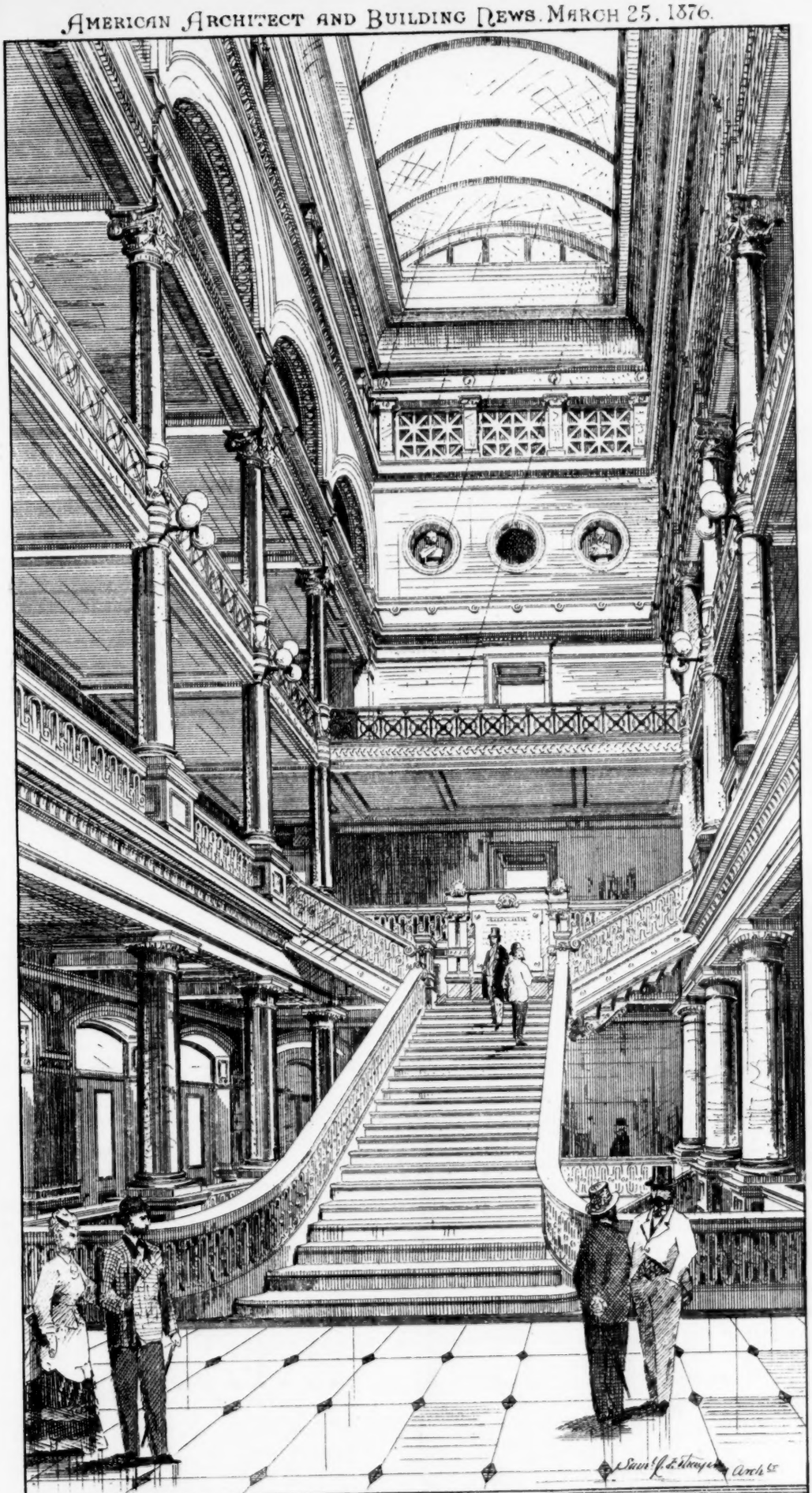
F-F-F- LAVATORIES

SCALE OF FEET

X-X-X UNAPPROPRIATED



Basement Floor



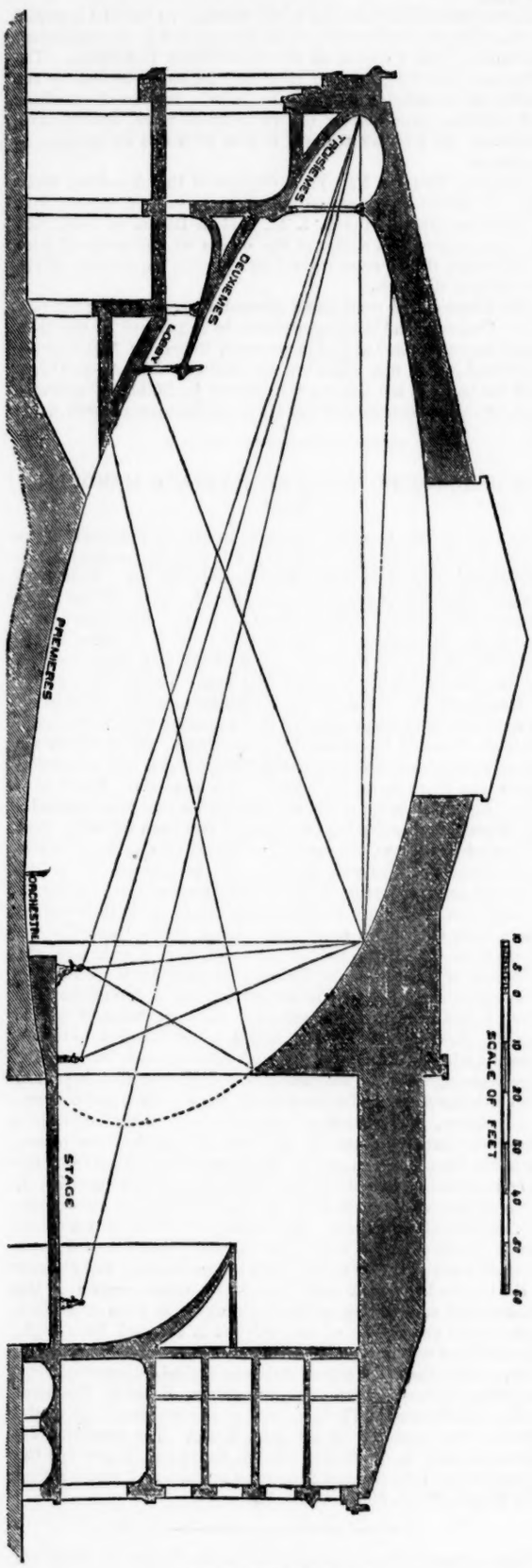
Central Hall · and · Staircase: · :City Hall: · · :Providence·

JAMES R. OSGOOD & CO. BOSTON

back of
passages,

cooled

back of the stage. This will draw in pure air by underground passages, — which is to be carefully warmed in the winter time, and



LONGITUDINAL SECTION.

cooled during the hot season, — and force it into the theatre from behind the sound-reflector at the rear of the stage, causing it to escape beneath the feet of the spectators.

The theatre is to be lighted not by a single central lustre, but by a series; and, since the gas is to be laid on in tubes on the ordinary principle, so a system of tubes will be provided to carry off the products of combustion without their being in any way permitted to mingle with the main body of air in the interior. The centre of the ceiling is to be occupied by a movable canopy of a material at once rigid and light; this is to be so arranged as to open, or fall back, leaving a large open skylight for day performances.

There are two methods of architectural treatment suggested: one, the erection of a new and independent building, forming a complete architectural design on a large scale; the other, by which it is proposed to retain most of the buildings on the exterior line of the site, and enclose the theatre within them, thus making it a specimen of internal architecture alone.

[NOTE. — The illustrations which we give are copied from the reproductions in the Builder of the drawings of the *Revue Nouvelle*.]

FOREIGN BUILDINGS AT THE CENTENNIAL.

UP to this date, only seven foreign Governments have erected, or signified their intention of erecting, buildings within the enclosure of the Centennial Exhibition. These are the British, German, Spanish, Brazilian, Japanese, Swedish, and Austrian Governments, though this latter is represented by a bakery, which is supposed to be a private venture. None of these buildings, which are to be used as the offices of the respective commissioners, are yet in existence, save the English buildings and the Swedish log-schoolhouse. It was understood from the beginning, that Russia was little likely to take part in the exhibition, so her absence excites no remark; but that France has not yet signified her intention to aid in beautifying the grounds by the erection of some characteristic pavilion for her commissioners causes much remark. It is expected that the Government of Morocco will also put up a pavilion; and this, together with the Brazilian pavilion, which is also to be in the Moresque style, and the Japanese house, will give the grounds that air of strangeness and picturesqueness that most people would be disappointed at not finding there.

The English buildings promise to be among the largest, and in themselves the most interesting, at the exhibition. They compose a group of three buildings, the largest one being intended for the commissioners' offices, while the others are to be used, one as a kitchen, the other for the police force. They are half-timbered structures, their ephemeral character being shown by the filling that is used, which is neither of brick nor of stone, but simply of laths and plaster. The façade of the large building is occupied by three large gables, which express their construction with all possible frankness, and have that air of picturesqueness which is found in the old half-timber houses of Chester and other parts of England. The body of the building seems to be all window; for the casements of the rooms and corridors in the two stories are connected, and form an uninterrupted line of windows.

The interior is attractively finished, great attention having been paid to the mantlepieces, which are of sculptured hard wood, fireplaces, stairway, and furniture. As might be expected, free use has been made of tiles, — painted tiles for the fireplace jambs, enamelled tiles for the hearths, encaustic tiles for the floors. There are two halls: one a kind of interior porch; the other a larger and more handsomely finished room, having at one end a large black walnut mantlepiece, and from which the grand stairway ascends to the upper floor. A long corridor opens right and left from this hall, giving access to the various offices of the commissioners. In the upper story there are other offices for the commissioners, and a variety of smaller rooms appropriated to the use of the housekeeper and the domestics.

Drawings of the exteriors of the English buildings were published in the Building News towards the end of the past year.

The Philadelphia Press says that "The Japanese building is up and under roof, and atracts the attention of a very large number of persons. However odd it may appear, it cannot be denied that the workmanship is fine. The roof is covered with a peculiar kind of black clay tile, turned up at the corners, and laid upon a whitish composition that is not unlike plaster-of-paris. All of the material was brought from Japan, and all of the work done there, so that all that remains for the men who were brought here to do is to fit the parts together. The result is, that a building has been set up that is at once odd and attractive. Over the entrance is some fine carving. The windows are ornamented, and the panelling of the sides of the building is composed

of different kinds of fine-grained woods highly polished. The exterior is not entirely finished, and as yet no idea can be gained of what the appearance of the interior will be. Just beyond this structure is the building for the Spanish Commission. It is octagonal in shape, with a fancy porch and doorway. It is entirely unlike any of the other pavilions, but when finished will be attractive in appearance."

CORRESPONDENCE.

New York, March.

The city has gotten rid of a disfigurement during the past week, in the removal of the Colosseum to Philadelphia. To every stranger who has visited the city within the past two years, the ungainly construction which stood at the intersection of Sixth Avenue and Thirty-Fifth Street must have been a standing puzzle. It might have been a circus, a greenhouse, a storehouse, or a menagerie and aviary, so far as the exterior conveyed any note of its use. It was really a picture-hall for the hanging of one great sheet of canvas, on which was painted a view of London, and, by looking at which from an elevated gallery within the building, the visual effect was as if the spectator was perched on the apex of the dome of St. Paul's Cathedral. It was an optical illusion within, as the building was an architectural delusion without. The box was put up by R. L. Kennard, an Englishman, a civil engineer by profession, who had purchased the pictures of the old Colosseum in Regent Park, London, and brought them to this country on speculation. The building cost about $150,000, and was of iron construction. It may best be described as an iron bandbox, 150 feet across and 80 feet high at the cornice, with a roof slightly conical. The frame was of 3½ x 3½ inch T-iron, put up in sections or trusses set on radial lines. These trusses were about 8 feet wide at the bottom, and about 4 at the top; on the entire circle 32 were used. A tower, some forty feet in diameter at the base, was carried up the centre, having 16 of the ladder-like pieces of framework. The tower projected up through the roof to a height of nearly 130 feet. The roof timbers were thrown across from the inner to the outer circle of frames. The covering was corrugated iron nailed to furring-strips attached to the iron frame. The picture was hung on the inside, while from balconies on the central tower within the exhibition was viewed. At first it was a success; but bad management involved it, and two Philadelphia merchants, having bought it, determined to move it to that city. Mr. Charles O. Richard, known as the builder of the Memorial Hall dome, the central section of the Main Centennial Building, and of the Girard Avenue Bridge, took the contract for the removal. It will be placed at the corner of Broad and Locust Streets, and is to be ready for use on May 1. Four of the outer frames will be omitted, slightly contracting the building; and the roof will be so constructed that the tower may at any time be removed without destroying the whole, in order that when the views of London, Paris, &c., have ceased to serve as attractions, the building may be used as a circus, or perhaps a skating-rink.

Delmonico, the restaurateur *par excellence*, is preparing his new house on Fifth Avenue and Twenty-sixth Street. The building has a frontage of 155 feet on Twenty-sixth Street, 56 feet on Fifth Avenue, and 60 feet on Broadway. At present it is known as the old Dodworth building, and will undergo a thorough alteration. The first, second, and third floors will be given up to gastronomic uses. On the street floor a *café* 36 x 70 feet, and a restaurant 33 x 60 feet, will be arranged, with ample space for halls, &c., from the three entrances, one on either front. The largest dining-hall will be 25 x 57 feet, with ample ante-rooms and connecting apartments; all 14 feet high. The finish will be in marble and parquetry. The growing practice of having the kitchens at the top of the house has been followed; the fifth floor being given over entirely to the *chefs*, who will have ample skylight illumination. Seven dumb-waiters connect this floor with the several stories below, so that there will be no lack of communication, even when, as is not unusual, several large dinner-parties are in session at once. Griffith Thomas is the architect in charge of the changes.

On Tuesday last, the New York Chapter of the Institute held a regular business meeting, Mr. Napoleon Le Brun presiding. Mr. Carl Pfeiffer extended an invitation on behalf of Mr. Schwarzmann, the architect of the Centennial Commission, to pay a visit to the exhibition, and spend a day in an examination of the buildings. Mr. Pfeiffer explained that there were many matters which could not fail to interest the architects, and that the present was probably the best stage of progress to look into the technical questions touching the erections. It was determined to make the excursion; and Wednesday, the 15th inst., was fixed as the date.

It was resolved to make the social meeting on the 21st a special meeting for the consideration of the designs sent in for exhibition, on behalf of the Chapter, at the Philadelphia Exhibition. The selection of the designs to be submitted for final selection by the Centennial commissioners will be by ballot. In view of criticisms and opinions expressed in the professional press, and in other directions, the Chapter thought it best to define its position as follows: —

Resolved, That the New York Chapter of the American Institute of Architects re-affirms the view expressed in the fifth annual convention of the A. I. A., held in Boston in 1871, viz., that the architect and author of the design of any proposed work should retain the supreme control and general supervision of the execution of the work.

The Chapter then went into a general discussion of the bill now before Congress, and the proper course to be pursued for the gaining of the ends aimed at by the proposed Bureau of Architecture. No formal action was taken on the subject. Mr. A. F. Oakey read the paper of the day, on "Acoustics in Building," giving a very interesting summary of his studies in that department of his art.

THE ACADEMIC THEATRE, HARVARD MEMORIAL HALL.

One of our late numbers contained an interior perspective view of the Academic Theatre of Harvard University, occupying the apsidal projection of Memorial Hall towards the east. This is the last portion of the building to be completed, and it will be ready for use on the coming commencement. In plan it approaches the type of the classic theatre. On the side towards the tower is the stage fifty-eight feet wide and twenty-three feet deep, between the two staircases thirty feet by thirty feet. These features may be considered the chord of the auditorium, which, instead of occupying a semicircular space as in the antique type before mentioned, is bounded by seven sides of a polygon, within which the seats are amphitheatrically disposed rising towards the circumference where there is an ambulatory or precinctum. Above is a gallery supported on light iron columns with a similar accommodation of seats, and projecting twenty-eight feet from the wall. The roof, which is without columns, is composed of a series of intersecting trusses parallel with the sides of the polygon, the points of intersection supporting trussed hip-rafters on which is framed the high mansard roof; within, these rafters with their curved braces form the ribs of a polygonal dome, at the base of which is an open arcade of timber arranged like a triforium, the main lines of the roof-frame forming the *motif* for the decorative treatment of the ceiling. The auditorium has a diameter of one hundred feet, and will accommodate thirteen hundred people seated. The extreme interior height is seventy-five feet, and there is a window in the centre of each side on each story. The stage is arranged for the accommodation of people, with a central place of honor set apart for the seats of the president and corporation. Above, and extending across the rear of the stage, is a canopy or sounding-board in the form of a gallery for music, accessible from the staircases. The theatre is entered from the central memorial vestibule by the two staircases before mentioned, which are finished in black walnut. The theatre is in brown ash, with seats of black walnut. The wall-space of the post-scenium over the music gallery is to be occupied with a monumental Latin inscription setting forth the history of the university. The exterior of the theatre is of brick and Nova Scotia stone, completing the architectural composition of the building as to form and color. Each of the seven sides of the polygon is crowned by a high, gabled dormer containing a colossal bust in a roundel. These busts commemorate the seven representative or typical orators of history; viz., Demosthenes, Cicero, St. Chrysostom, Bossuet, Chatham, Burke, and Webster. These, as well as the wood-carving of the interior, were executed by Mr. John Evans. The contractor for masonry is Mr. L. P. Soule; Messrs. Geary and Noyes are the carpenters; and the internal decoration in color and stained glass is by Messrs. W. J. McPherson & Co.

Two new rooms have been prepared at the Louvre in Paris, for the reception of modern sculpture, and another room is also to be devoted to calcography.

THE PUBLIC VALUE OF A TOPOGRAPHICAL SURVEY.

At a recent meeting of the American Topographical Society, Mr. James T. Gardner read a valuable paper on the subject of a topographical survey of the State of New York. He proves quite conclusively the following propositions: —

"*First*, That there can be no proper valuation of real estate, hence no equalization of taxation, till the State is provided with correct maps of its entire public and private property.

"*Second*, That, owing to the perishableness of old landmarks, and gross inaccuracies in outlines and areas described by deeds, the boundaries of a large amount of property are so uncertain as to cause serious troubles, which will become more difficult of settlement with increasing values and density of population. To remedy this, is required a survey, that, by means of a system of imperishable monuments and accurate measurements, shall establish permanently the present lines between adjoining owners and States; so that each may know exactly what and how much he has, and be furnished with official maps.

"*Third*, To prevent the waste now in progress by successions of special surveys to meet each new need, it is desirable that the State make one general survey, of such accuracy that the maps may be used by engineers for planning and estimating the cost of public works, such as the laying-out of towns, villages, roads and railroads; drainage-systems for improving the health of our great marshy districts, and increasing the value of agricultural lands; water-supplies for towns and factories; and nameless minor wants of a developed civilization.

"*Fourth*, A detailed topographical survey is the necessary preliminary basis for a scientific examination of the State's natural resources. Without it we cannot know nor represent the distribution of rainfall, evaporation, water-power, woods and plants, soils, clays, coal, irons, gypsum, &c.

"With an exact knowledge of climate and surface conditions of the State, it would be possible to predict the regions where each different crop would flourish best. So the geologist, having determined the position of each underlying stratum in its relation to the surface, could tell when and at what depths to search for many valuable deposits.

"Prof. Benj. Pierce, the former Superintendent of the United States Coast Survey, states to the legislature of Massachusetts (House Doc. No. 40, 1875), that the *most expensive* coast-survey work costs $150 per square mile, or about 23¼ cents per acre. Since the State of New York has 47,000 square miles, it would not therefore be safe to estimate the total cost of a survey at less than $6,000,000, and the time necessary for completion at less than fifteen years. It will certainly take three years to organize and train the corps of surveyors sufficiently to expand the work to its proper scale. An expenditure of $20,000 the first year, $50,000 the second, and $100,000 the third, would be about the rate at which money would be required.

"Though the work will be equally accurate over the whole State, it will necessarily be far more detailed, and consequently most costly, in thickly settled regions, where also accruing benefits will be greatest. In general the cost will be proportional to the value of land; so that taxes for maintaining the work will fall heaviest where most work is done, and most benefit given.

"The gross amount of money may seem large; but when it is remembered that we have just sunk $6,000,000 in building basement stories for the State Capitol; that $2,000,000 of taxes are probably annually falling upon the wrong people; that thousands are wasted in costly disputes over questions of boundaries; and that deeds do not describe within ten per cent the areas of land actually conveyed, surely $6,000,000 is not too much to spend in fifteen years to render tenure secure and taxation just upon real estate worth four thousand millions of dollars ($4,000,000,000)."

He recommends that the survey be made with all the accuracy of the United States coast-survey methods, in order that the result may obtain the entire confidence of the public, and be final in the settlement of all questions at issue. Among the details it is advised that, —

"The determination of all positions must be done with the exactness of the best coast-survey work; and the horizontal contours, or line of equal elevation by which surface form is shown, must never in the improved parts of the State be over twenty feet apart vertically, and sometimes ten, or the maps will be useless to practical engineers and geologists."

Concerning the cost of the work, Mr. Gardner says, —

"This cannot be exactly estimated until a reconnoissance has been made, and the ability of the superintendent tested. The cost may be lessened twenty per cent by his superior skill and energy.

"There are about fifteen million improved acres in the State, of which the survey must be prepared to furnish plats on a scale of $\frac{1}{2500}$, or about one inch to two hundred feet. Our towns that now have tax-maps use this scale for the farm lands, and fifty or one hundred feet to the inch for village and city lots."

THE NEW YORK STATE CAPITOL.

Boston, March.

To the Editor of the American Architect.

The advocates of "architectural competition" may find an instructive lesson in the present condition of this extensive pile, and may possibly modify their opinions as to the best course to obtain the happiest work for the many important buildings for the General Government.

It seems from the report of the "Advisory Board," that this eminently successful competition resulted in furnishing to the State a building principally noticeable for wasteful extravagance and sham construction. "Dark passages," "narrow and dimly lighted stairs," "shams and makeshifts," "frittered away in unreasonable and incongruous complexity of detail," "lighting, ventilation, and acoustic adaptation are also disapproved," the dome "cumbrous and costly beyond reason," "stairs cramped and undignified," &c., — these are the terms of the expert critics. I have nothing to say about the design they condemn, nor about their own which they propose to carry out on the two stories of the original one already built; except to suggest that in view of their own statement that "the fact really is, that by no possibility could the accommodations which have been required to be provided for in the new Capitol be conveniently arranged on the ground-plan of the present building," it would be hardly prudent to spend "four and a half millions" of the people's money in trying to do so. Neither is it worth while to raise any question as to the disinterestedness or competency of the "Advisory Board." These points are for the consideration of the people of New York, who pay the bills. But it may do no harm for a disinterested spectator to suggest that if the first competition has failed, and if competitions are such profitable affairs, that new ones might be instituted for each successive story of the remaining structure. These would doubtless result in a beautiful, convenient, and economical embodiment of the taste and liberality of the "Empire State," which might rival the "Washington Monument" or the "Tower of Babel." Such contests, in these dull times, would unite the profession, increase fraternal feeling, and perhaps develop unsuspected talent. The successive problems, as they arose, would certainly give a sufficient amount of "academic discipline," as well as training of a more plodding and practical sort. The city of Albany would also thrive on the board-bills of successive boards of impecunious architects, who would swarm like ants on the incomplete structure.

John A. Fox.

New York, March.

Mr. Editor, — I have looked over the revised drawings for the new State Capitol at Albany with considerable interest; and must say, if the State is to save but $996,000 by the greater economy in the design, I certainly think it would be the greatest piece of extravagance in its adoption, as nearly all whom I have heard speak on the subject think Mr. Fuller's design is better worth two million additional.

Sincerely yours, F. A. I. A.

THE FRENCH PREFECTORAL ORDER.

New York.

To the Editor of the American Architect.

Sir, — Some points in the translation of the French prefectoral order, which you recently published, need a little further elucidation to prevent possible misconception. In Article III., second paragraph, the use of earthenware pipes for the interior lining of flues is forbidden. In the Vienna building-laws, which I had the pleasure of translating for the Massachusetts Commission, their use, especially on the level of floors, is compulsory. Now, this matter is important, and perhaps deserves discussion. I see no reason for forbidding their use, where proper inspection of the building is maintained. The smoke passes through glazed pipe with little friction; and, if the difficulty lies in the bond of the brickwork about the flue, a pipe might be moulded square outside, round inside, and with the corners hollowed or cellular.

Such tubes are very valuable in preventing the passage of sparks, which are apt to find their way between bricks.

The wording of Article IV. is very unhappy. What is an area of 60 c. m. in length by 25 c. m. in width? The meaning is decipherable; but the expression is very unscientific. The latter sentence goes on to say that the long side should not exceed the short side by more than one-fourth: then how do we get 60 x 25? The whole is unintelligible. Of course it is desirable to state, that the plaster used is always plaster of Paris, and that it is applied directly to the stone without furring or lathing. It occurs to me that Article IV contains a misprint, and should read at the end, "four times," instead of "one-fourth." The signification would then be simply, flues may be $7\frac{1}{2}$ inches, say 8 inches wide, not less; and as long as fourfold the width, not more. Further than this, it is well to say that French houses have in general fire-proof floors and partition-walls. N. L. D.

CANADIAN NOTES.

OTTAWA. — The Annual Report of the Minister of Public Works of the Dominion shows that the total amount expended by the Department during the fiscal year was $10,615,429.19; $8,008,707.91 in construction, $923,107.98 in repairs, and $1,692,613.30 in staff and maintenance.

In the estimates for the coming year, the effect of financial stringency is apparent in the decrease in number and amount of appropriations for public works. The estimates show a startling decrease. (1) In "Public Works and Buildings (chargeable to income)," we find, for 1876–77, $1,089,850 against $2,791,050 for 1875–76. (2) In "Public Works and Buildings (chargeable to capital)," there is $8,777,900 for 1876–77, against $13,737,125 for the previous year. The decrease is given as follows: —

Penitentiary Buildings	$190,600
St. John P. O.	65,000
Montreal P. O.	93,000
Lake Superior and Red River route	75,000
Toronto Customs House	78,000
Ottawa P. O.	88,000
Sundry Customs Houses and Quarantine Stations in Nova Scotia	39,000
Customs House and Post Office in Manitoba	25,000
Montreal Examining Warehouse	40,000
Thunder Bay Harbor	6,000
Harbors and breakwaters in Nova Scotia	206,000
" " Ontario	365,300
" " New Brunswick	111,600

The decrease in "Public Buildings, Ottawa," is not so apparent in the total as in the items, being made up, in great part, by the $296,000 for extension of West Block; the remainder being re-votes of unused portions of the last year's appropriations.

PUBLIC BUILDINGS, OTTAWA.

	1875-76	1876-77
Library	$80,000	
Tower	9,000	$9,000
Grounds	90,000	18,900
Retaining walls, gates, footpaths, painting, &c.	14,000	8,000
Workshops	5,000	
Extension, West Block	100,000	296,000
Improvement of ventilation, Parliament Buildings	7,125	
Fire, walls, water-service, attics, and other works inside buildings	70,000	
Total	$375,125	$331,900

CHARLOTTETOWN, P.E.I. — The new law-court building has been in course of erection on the most public square in this city since April, 1874, for the use of the Provincial Law Courts, and has just been completed. The new building is of pressed brick, and is ornamented with freestone belts, quoins, hoods, and caps. The heads of the windows are circular. The entrance doors are large, with rustic quoins. The building is ninety-five feet long, fifty-one feet wide, and fifty feet in height. It has a Mansard roof, with ornamental square towers, and with ornamental cast-iron railing around the roof and towers. In one of the towers there is an illuminated town-clock.

The building contains spacious rooms for the offices of the Prothonotary, Land Commissioner, Register of Deeds, Judge of Probates, and Sheriff. It also contains a court-room fifty-one feet long, forty-eight feet wide, and twenty-two feet high, and three judges' rooms, three jury-rooms, and one grand-jury room. There is a spacious basement, with keepers' rooms, fuel-rooms, furnace-rooms, &c. The building is warmed with steam. It was built by "day's work." Mr. Thomas Alley of this city was the architect and builder. The most remarkable peculiarity, perhaps, about this structure, is the fact that this beautiful building has been so substantially built, and is carpeted and otherwise furnished throughout, ready for occupancy, and at a cost of only $56,000. — *Toronto Globe.*

QUEEN VICTORIA has informed Lord Dufferin that she will assist in the projected improvements in Quebec by presenting the city with $50,000 for the construction of one of the proposed city gates, the one for which it is used to be called the Kent Gate.

NOTES AND CLIPPINGS.

THE Catholic Memorial Fountain, which is to be one of the features of the Centennial exhibition, will it is said, be completed and ready for the statuary by the 9th of May. About one-third of the marble work of the fountain is already in place.

It has been decided to place around the circular basin seven medallion heads, sculptured in marble, of the following Catholic notabilities of the Revolution: 1. Lafayette, born in France; friend and companion of Washington. 2. Madame Lafayette, wife of General Lafayette, also born in France; celebrated for her patriotism and earnest support of the American Colonists in their struggle for freedom. 3. Comte de Grasse, born in France; commander of the French fleet which assisted at the capture of Cornwallis at Yorktown. 4. Count Pulaski, born in Poland; commander of Pulaski's Legion. He was killed at the attack on Savannah. 5. Colonel Stephen Moylan, born in Ireland; aide-de-camp to Washington, and commander of the famous Moylan's Dragoons, a Pennsylvania organization. 9. Thomas Fitzsimons, born in Ireland; member of the Continental Congress, noted for his ardent support and aid of the Colonial cause. 7. Kosciusko, born in Poland; distinguished for his military services in the Revolution, and famous in the world's history for his heroic efforts to gain liberty for Poland.

THE President has signed the bill to provide for the purchase of material and for the continuation of work on the building for the custom-house and post-office at St. Louis; also, the act authorizing the purchase of additional grounds for a custom-house at Nashville.

THE Union League Club of Philadelphia is re-fitting the League House, and improving some of its arrangements, with the view of offering its hospitalities to members of foreign commissions, and others, during the exhibition.

BUILDING PROSPECTS. — It is probable that aside from a number of large stores, and rather more than the usual portion of French flats, building in New York will not be over-brisk the coming season. This is shown by the sluggish market for materials, and is but natural with falling rents and the current low prices. But it may prove that builders are only holding off later than usual, to watch the course of events.

THE new building for the Royal Conservatory of Music at Brussels has just been opened. It is built of brick with gray stone trimmings, and is richly ornamented with sculptures. The principal concert-hall is built like a regular theatre, and holds twelve hundred spectators.

LAKE-DWELLERS. — A Zurich paper reports a discovery which throws light on the hitherto obscure question as to how the Lake-dwellers disposed of their dead. Between Anvernier and Colombier, in the vicinity of two lake dwellings, one of stone, the other of the bronze age, house-building excavations have brought to light a chamber supported by upright stones, and containing ten or fifteen skeletons, the skulls collected in one corner, the other remains in the centre. Near them were found a bear's tooth, a wolf's tooth, half a boar's tooth, a small smooth bone disk, two hatchets of serpentine stone, a bronze needle (all these bored through), a small copper ring, and four small, bronze, child's bracelets. It is supposed to be a family grave of a date transitional between the stone and the bronze ages.

THE Richard Wagner Theatre at Baireuth is fast approaching completion.